

**DEQ Wind Energy Regulatory Advisory Panel (Wind RAP)**

*Living Resources Subcommittee*

September 15, 2009 Meeting

Final Meeting Notes

**Location:** DEQ Central Office, 11<sup>th</sup> Floor Conference Room  
629 E. Main Street, Richmond, VA 23219

**Start:** 09:35 a.m.

**End:** 03:00 p.m.

**Subcommittee Chair:** Judy Dunscomb, TNC

**Recorder:** Debra A. Miller, DEQ

**Subcommittee Members Present:**

Tom Smith, DCR

Bob Bisha, Dominion

Ray Fernald, VDGIF

**Subcommittee Members Absent:** none

**Public Attendees:**

John Anderson, BP Wind

Robert Hare, Dominion

Chris Hobson, DCR-DNH

Rick Reynolds, VDGIF (RAP Alternate)

Jim Madden, BP Wind

David Young, West, Inc. (by telecom)

Larry Nichols, VDACS (RAP Alternate)

**Agenda Item: Welcome and introductions**

**Discussion Leader:** Judy Dunscomb

**Discussion:** Ms. Dunscomb began the meeting by reviewing the agenda and the meeting objectives. Introductions were made by all in attendance.

**Agenda Item: Recap of Last Meeting**

**Discussion Leader:** Judy Dunscomb

**Discussion:** A recap of last meeting was presented. Review of where the subcommittee left off on their discussions of finding of significant adverse impact and the discussion of Scenario A regarding mitigation measures for impacts to bats. Significant adverse impact consideration list from the last meeting included:

- ✓ Bats
- ✓ Threatened and endangered species – plants and animals
- ✓ Birds
- ✓ Heritage Resources
- ✓ Invasive species
- ✓ Other terrestrial wildlife

Two additional considerations that the group had previously discussed were also highlighted:

- ✓ Economic exposure
- ✓ Mortality trigger for mitigation

The group then considered the questions and issues related to pre-construction monitoring. Information was provided on data available regarding pre-construction monitoring and the concerns related to weak correlation between monitored pre-construction activity and post-construction mortality. As the group discussed these options, a

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reminder was provided to the subcommittee that in the recommendations criteria required to be considered by DEQ (significant adverse impacts, mortality thresholds, mitigation, etc.) needs to be developed as part of the PBR regulation and that DEQ will rely on these criteria for implementing the regulation. During the discussion, the group reviewed the act in regarding pre-construction and mitigation.

The process was flowcharted. The flowchart led from impact analysis to determination of impact (significant?) to mitigation/monitoring, and the questions that will need answers/recommendations from this group regarding this process. Questions were posed to the group regarding criteria for determining impacts and correlation of pre-construction monitoring to post-construction mitigation. Concepts of adaptive management, as provided in the DGIF information, were also reviewed. Based on the act, potentially significant adverse impact to wildlife must be likely for mitigation and its efficacy to be required. Topics on what would be significant impacts (i.e., how many bats?) and options for mitigation to include minimization of mortality, habitat protection, and research were also discussed.

The group continued to deliberate on the issues regarding the difficulty of correlating post-construction impacts based on pre-construction monitoring. Data on this subject are wide ranging. In general, it is noted that there will be substantial impacts from these facilities on bats. So what are the thresholds that are acceptable? The regulation will need to specify what are the significant adverse impacts and, for the mitigation plan, it will need to include what is required to be in the plan and its objectives. Some concern was noted as mitigation strategies may need to have allowance for coordination or consultation with wildlife experts for some sites.

The group then considered what do we want the pre-construction monitoring for bats to look at? How much effort to go into pre-construction analysis? What do we need to do pre-construction to get answers? Based on this discussion, the following ideas for pre-construction monitoring were provided:

- ✓ Pre-construction monitoring objectives:
  - Detect presence/absence and possibly the relative abundance of spp groups
- ✓ Method: What is needed in pre-construction monitoring?
  - Acoustic Monitoring
    - Data collection April thru October
    - Paired high and low placements of acoustic mikes per met tower
      - Minimum high placement > 40m (at or as close as possible to hub height)
      - Low placement 2m of ground
    - Number of monitoring locations
      - Minimum of 1 met tower with paired acoustic monitor per ridgeline
      - 50% success rate on the monitoring (success rate is the number of nights that detector is actually monitoring) as an average during the monitoring period.

*After these discussions on pre-construction monitoring the meeting was adjourned for lunch at 12:05pm.*

*The meeting was reconvened at 1:25pm.*

### **Agenda Item: Lunch Meeting Update**

**Discussion Leader:** Judy Dunscomb

**Discussion:** An update on the lunch meeting regarding life of permit, repowering (new permit required? This is likely to be a plenary discussion), and wildlife impacts “found” after construction (provide for standard reporting requirements?) was provided to the subcommittee.

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### **Agenda Item: Mitigation Plan and Efficacy Monitoring**

**Discussion Leader:** Judy Dunscomb

**Discussion:** Based on the last meeting, the options for mitigation developed were further discussed. The mitigation options:

- deterrents
- curtailment (changing turbine cut-in speed)
- habitat protection/offsets
- funding research to reduce mortality rates
- turbine management
- maintenance (down for maintenance during higher times – Aug/Sept)
- one turbine with highest mortality?
- Allowed mortality of Z # of bats/
- Retrofitting (offsite mitigation)

Deterrents are not currently very successful, but may become more so in the future, so language should allow for their use. Curtailment, currently, looks to provide the most direct impact on dealing with bat mortality. For curtailment, the group needs to consider an upper limit of bat mortality that would then require curtailment.

There have been recent cut-in speed studies and some of these studies researched different cut-in speeds. Based on the studies done, the cut-in speed range of 3.5 to 5 m/s seems to provide the greatest benefit. However, cut-in speeds will likely have a much greater fiscal impact on projects at sites with lower average wind speeds as they rely on lower wind speeds more of the time to generate power.

The group continued discussing mitigation options regarding curtailment and the appropriate time of year and time of day that will provide the best benefit from curtailment. For curtailment, ideas included a curtailment period from July 15<sup>th</sup> thru October 31<sup>st</sup>; a time period from sunset to sunrise; cut-in speed of 5 m/s.

The group then discussed how best to monitor in post-construction for mitigation and efficacy of the mitigation. For post-construction monitoring, these ideas are: sampling of 30% of the turbines with a minimum of 10 turbines; searched from April-October; searches normally done in a 3 to 7 day rotation (may need to review removal rate). For a curtailment study of cut-in speeds, daily searches of 5 to 7 turbines per group (0 m/s, X m/s, Y m/s) studied during the time of highest bat mortality (August to September).

Ideas regarding tier approach to mitigation options were considered. Consideration of economic impact of mitigation will also need to be measured and how to regard adaptive management for mitigation plans/options.

### **Agenda Item: Additional meetings and Adjournment**

**Discussion Leader:** Judy Dunscomb

**Discussion:** Additional meetings of the subcommittee meeting are needed. The group elected to meet on October 6<sup>th</sup> in addition to the September 17<sup>th</sup> and October 13<sup>th</sup> meetings. The meeting was adjourned at 2:56pm and the next meeting will be at DEQ's Piedmont Regional Office on September 17<sup>th</sup>, 2009.

#### **Action items:**

Bob – Draft pre-construction monitoring regulatory language by September 30<sup>th</sup> (due to Carol).

Judy – Discuss with John Daniel drafting of language for significant impacts.

“Parking Lot” issues - Issues raised during the meeting for future consideration.

✓ What needs to be in a mitigation plan (and in the regulation for mitigation plans)?

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- ✓ What is the standard for monitoring of first few years post-construction? Will we have an ability by regulation to be more intense during the first year (and through the second and third year)?